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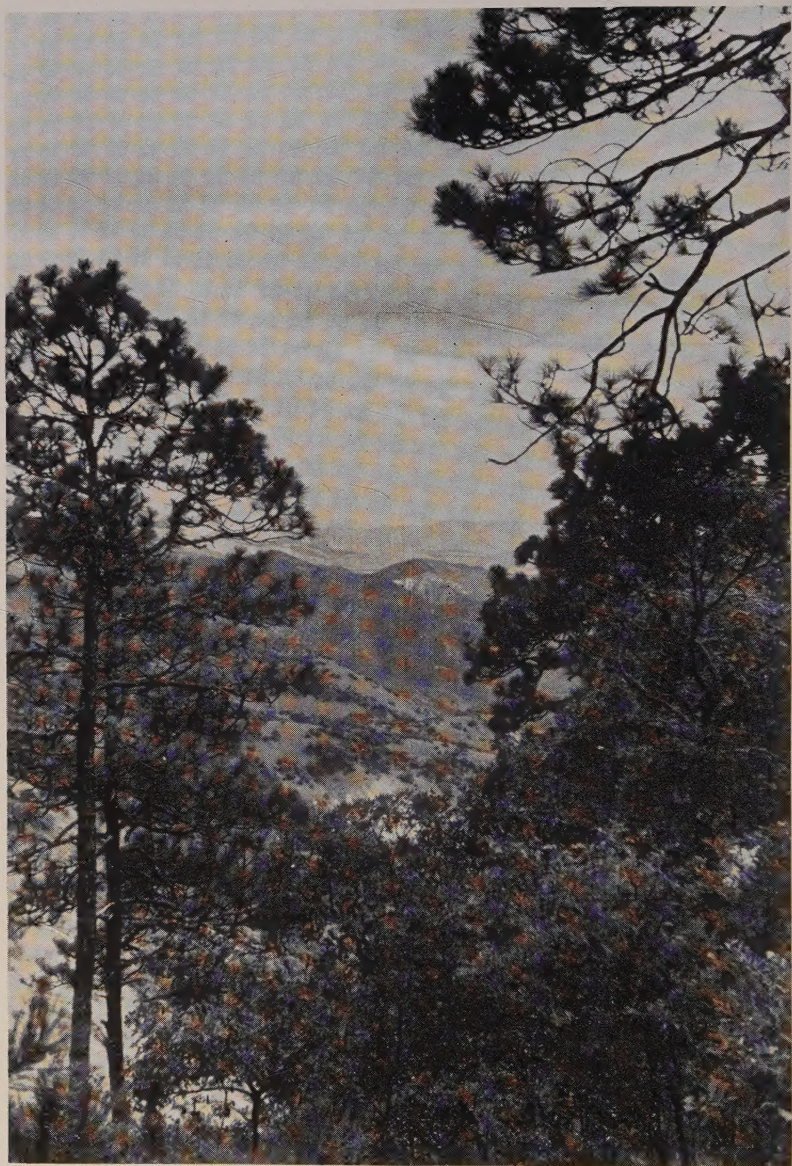
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Toward Juarez Cañon from Set No. 3.

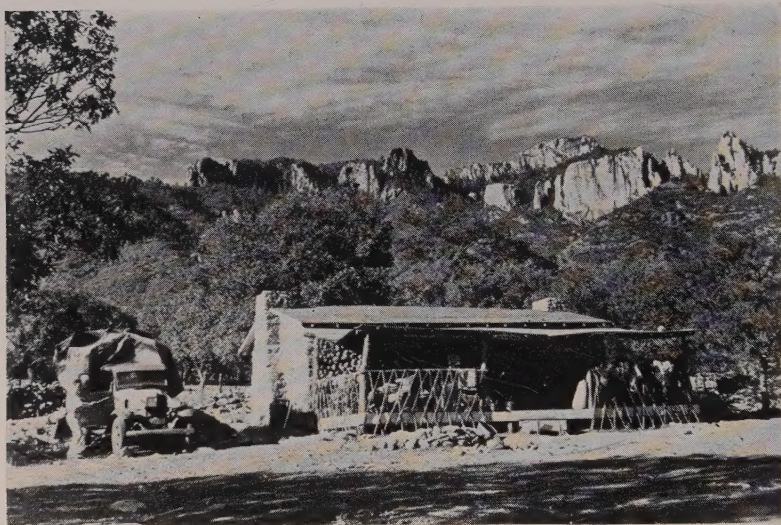
Lion in the Carmens

TAPPAN GREGORY

MOUNTAIN lion, of course—to me the greatest of our North American cats—a mountain dweller, ghost-like marauder, roaming the reaches of the night on silent pads; lithe, sinewy, predator *par excellence*, death on game and domestic stock; legendary terrorist through the ages—yet inculpable withal, impelled by instinct to live in the exercise of the talents with which he is endowed by nature, conscious only that he must live by eating and that he must eat the only food he knows—fresh meat; unwittingly running counter to the edicts of civilization in seeking his food where and when he can find it, taking it ruthlessly in inexorable pursuit; timorous, querulous and puzzled in his contacts with man.

The romance of his existence and the fact that his image was missing from our collection of wild animal pictures, persuaded us that we should seek him in his natural habitat and resist the temptation to defer this quest in favor of enjoying the fascination of another joust with our favorite wild animal, the timber wolf. Success had attended our effort with the black wolf in Louisiana with such unexpected smoothness that we discussed many times until the small hours of the morning the doubtful wisdom of delaying a second effort. But it seemed that this could wait, that our old friend could probably hold his own for a long time to come. So, when out of a clear sky the opportunity suddenly presented itself, there was no further debate and we bent enthusiastically to the task of preparation for a jaunt to northern Mexico.

It was May of 1937 when I first heard while in Washington that John Loomis of San Antonio, Texas, had made available to us the privileges of the Carmen Mountain Hunting Club on its property in the Carmen Mountains in the State of Coahuila, Mexico. This consisted of one hundred thousand acres of unspoiled wilderness. It seemed advisable to go in before the middle of September, which left us little time for preparation, and most of the load fell on Young's shoulders. The effort was sponsored by the United States Bureau of Biological Survey, the Chicago Academy of Sciences, the Smithsonian Institution, and the National Zoo and diplomatic representations were called into play to facilitate our entry into Mexico. Our passports were in the shape of special collecting permits obtained through the courtesy of Señor Juan Zinser, Chief of the Game Service, of the Department of Forestry, Fish and Game, of the Mexican Government. All of this took time, and still left us with the question of supplies and equipment to be settled. Through the good offices of Mr. Loomis



Club house on property of Carmen Mountain Hunting Club.

and the capable assistance of C. R. Landon of the Survey, the services of Davis Lojez, a competent cook, were secured, and our food purchased in Mexico through a very efficient broker in Villa Acuna, Señor Raymundo Rivera.

The personnel of the party included Stanley P. Young of the Survey, Robert S. Sturgis and Dr. William H. Hazlett of Chicago, C. R. Landon of the Survey, Ira Wood, Survey lion hunter, and Antonio Gonzales, also of the Survey. Wood went into the mountains about three weeks ahead of us to find likely places in which to set cameras with a view to photographing lions, for our main objective was to induce mountain lions in their natural state to take their own pictures.

Meanwhile, Sturgis was far from idle and spent many hours putting in shape our ten set-cameras and all other necessary apparatus.

We described in so much detail in *The Black Wolf of the Tensas**, the process of taking pictures with the set-camera that it hardly seems advisable to repeat any of that description here. A brief word is sufficient. The set-camera is so arranged in the field that wild animals, by pressing upon a wire or walking upon a buried tread, or taking a bait, will close an electric circuit and shoot a charge of flashpowder, which in turn furnishes the energy to trip the shutter and take the picture. This device will work day or night, winter or summer, rain or shine.

*Program of Activities of the Chicago Academy of Sciences, vol. 6, 1935, pp. 35-68.

Sturgis and I loaded one car with duffle and apparatus and were rolling soon after daylight on the morning of September 8th, to be joined at an outlying crossroad by Hazlett in his car. Every day's drive seemed longer than the preceding. At Oklahoma City we delayed long enough for a pleasant visit with A. E. Gray and an exchange of reminiscences of our wolfing trip to Louisiana, some three years before, to the success of which he had contributed so much. Here we took on additional equipment, giving us a load of a thousand pounds or so. On the 11th we made our first rendezvous in San Antonio. Young's train was late, so we profited by the delay to visit the historic old Alamo. It had been hot, but soon the wind whipped out of the north and the natives shivered as the mercury plunged down to about ninety degrees.

Reunion on the station platform quickly followed, and that evening there was much talk. John Loomis received us royally at his house, and furnished much useful information.

The 12th was a busy day. All equipment was transferred to a truck driven by Tony Gonzales. The rest of us rode in Survey cars. At Del Rio we passed over the Rio Grande, barely more than a trickle in broad mud flats, and were met with courteous and efficient treatment as we crossed the border. Delays were reduced to a minimum and shortly we had cleared and were comfortably settled in Mrs. Crosby's Hotel at Villa Acuna, where we spent the night.



Part of the burro train at destination in the Carmens.

The next day we faced the supposedly barren, arid desert of northern Coahuila—one hundred and twenty-seven miles of it, over a rough, rocky road, cut with many arroyos. We were hardly more than half an hour out of Villa Acuna when the truck stuck fast in the mud. For an hour or so it resisted all efforts at dislodgment. As though this were not enough, we saw to our alarm a few miles farther on that the Arroyo de Los Caballos, instead of being a dry wash, had been turned into a small lake, on which a flock of pin-tail ducks paddled happily around. The passenger car scooped up a liberal supply of water in making the crossing, necessitating quick action to keep delicate instruments from being damaged on the flooded floor. We heaved a sigh of relief when the truck poked her nose up the far bank before her engine coughed and died. This spot had been designated for lunch anyway, and after the interval of rest, our transport moved on again, jumping and jouncing along the rough, twisting road, finally whirling about the end of the Burro range and climbing before dark to the club house of the Carmen Mountain Hunting Club, in Burro Cañon in the Carmens, at an elevation of about five thousand feet. We had been twelve hours on the road that day and the thought of a hot meal and rest was very pleasant.

II.

At the club house we transferred to horses and burro train. A full day was occupied in driving in the stock, shoeing the horses and planning the loads. By eight o'clock on the morning of Wednesday, September 15th, we were on the trail, zigzagging our way up the first steep slope to top out at approximately sixty-eight hundred feet and look off south from this first saddle over the lower reaches of Botellas Cañon to the distant mesas beyond which camp was to be pitched. The drop into Diablo Cañon was steep, but the trail clear and well marked and the prospect inviting.

Unexpectedly, Wood pulled up his horse and dismounted. We ranged along-side, senses alert. And there on the ground, as plain as a written signature, we saw our first fresh lion scratch. To find it so soon after leaving the top of the ridge was most exhilarating. Another was discovered in the bottom of Diablo.

Our horses were experienced travelers in this country and before long they had carried us over the next rise and down to where the trail straightened out again and followed the stream that flowed intermittently through Botellas Cañon.

Another fresh lion scratch close to the trail was passed up at the time as being perhaps a little far from our proposed camp site for convenience, and it was not until we reached an open, park-like flat, a favorite camping ground of the members of the club, that we dis-



A lion scratch.

mounted and unloaded the apparatus carried on the horses for the first set.

The selection of the exact spot was not easy for, judging from fresh scratches, lions were accustomed to range widely in the flats after coming in from different directions. It seemed that they probably used a trail dropping down from the mountains to the west, and here, at the edge of the park we buried the first tread and set our first camera. Unfortunately, there was no tree available on which the camera itself could be mounted, and it was therefore necessary to use tripod legs.

Our experience with members of the cat family in the past had suggested that they are probably not as sensitive to the sight and scent of the works of man as are the members of the dog family. We felt, however, that as long as this was our first effort with mountain lions, it would be wise to approach the problem with the same care applied in setting for wolves. This made us reluctant to use tripod legs on the theory that the more apparatus that could be removed from the normal line of vision of the animals the better the chance of success. As a matter of fact, this was the only set where the camera was not placed on the side of a tree.

In making this first set, we used squares of "de-scented" canvas spread upon the ground, at points where it was necessary for any of us to work in burying the tread, and "de-scented" canvas gloves were worn to preclude the possibility of leaving human scent in handling

any part of the apparatus placed where the animal was supposed to step. This practice was the unalterable rule at all of our sets.

The tread consisted of two metal plates, each one a foot square, the bottom plate carrying a series of nails pointing upwards and the top plate resting at the four corners upon four pieces of spring metal, taped for insulation. The strength of the spring metal, the gap between the top plate and the nail points, and the amount of earth covering the tread, regulated the pressure required to press the top plate onto any one of the nail points and thus close our electric circuit. The plates were held together by waxed string and enclosed in an oiled silk envelope. When the tread was placed in a shallow square trench, it was covered with a piece of canvas to insure further against the possibility of bits of earth wedging themselves between the plates even through the light envelope. The electric current was carried to the tread through a long, well insulated cable, one wire of which connected with each of the plates. With the addition of a few drops of pure oil of catnip, a distinct experiment in the art of photographing lions, the set was complete and we moved on, still ahead of the first section of the burro train. We had dropped at this point to an altitude of about six thousand feet.

Our trail kept us on the level until we passed the mouth of Oso Cañon. Here we turned off and scrambled up this cañon to a crossing in fairly fast, deep water, and on a few hundred yards until we reached another spot selected by Wood in well timbered flats, where again several fresh lion scratches were disclosed. One in particular at the edge of the trail seemed like a perfect location for another camera. It was perhaps two hundred feet higher than the No. 1 set. By two o'clock in the afternoon the second set was in order and we turned again up our main cañon, headed for camp. From the mouth of Oso Cañon south, the main cañon was known as Carboneras Cañon. When we had covered about eight miles from our starting point at the club house, we reached the spot already tentatively selected by Wood for camp, at an altitude of about sixty-seven hundred feet. Here, closely hemmed in by protecting hills, in the shelter of a steep escarpment, among the tall ponderosas, we found intermittent pools of water connected by a slow trickle, affording an adequate supply for our needs.

Hardly had a brief survey been completed to determine the location of tents and fireplace, when the first section of our train came trotting up amid the shouts of the packers. Thirteen burros and one mule brought in what they could and it was surprising how much each of these little burros managed under the guidance of Pancho, Leopoldo and Felix, seasoned and expert from years of experience in these mountains.

It required the sustained and energetic effort of every member of the party to accomplish the establishment of an orderly camp before

sundown and then we were ready and eager to submit to the ministrations of our willing and versatile cook.

We found ourselves in a rough country, cut with many deep, rocky, steep-walled cañons, hemmed in by wooded peaks and sheer escarpments. The slopes of live oak, hosts to the parasitic mistletoe, alternated with the great ponderosas growing in fine stands, sometimes on the slopes and again in flat, open parks carpeted with lush grass. Several kinds of black oak also occurred and junipers three or four feet in diameter. The floor of the forest was liberally sprinkled with many varieties of blooming wild flowers, and with all this we found prickly pear, maguey and barrel cactus. It was a country of virgin timber. Any lumbering that may have been done was so far in the past that practically no visible signs remained, and apparently no fires had scarred the country for decades. Throughout the whole of this tract in the Carnien Mountains, there was no human habitation. The mountain range itself, extending from northwest to southeast, rose to an estimated maximum altitude of ten thousand feet. The highest recorded and reported to us in the section near our camp was Loomis Peak, ninety-three hundred feet.

Our shelter of canvas was welcome that first night in camp for the sky was overcast and the temperature made heavy blankets comfortable. With no work awaiting us in our improvised laboratory, the camp fire did not hold us long from our bedding rolls and the last sound brought to our sleepy consciousness was the call of a whippoorwill from the far bank of the home cañon.

III

We awoke to receive an inkling of what to expect in the way of weather. The clouds piled up and rain fell briefly just as a sample, before the sun finally broke through late in the afternoon. Weather is a vital matter in working in the open with cameras. It is not that they cannot stand wet weather, but wet ground is hard to work in without leaving human scent, and when it rains, it is not always easy to keep the powder dry, and moisture on the lens will fog many otherwise acceptable pictures. Moreover, in wet weather, in order to maintain the apparatus in condition, it is necessary to visit the sets oftener than wisdom would dictate, having in mind the possibility of frightening the wild animals by tramping up too much the spot to which we are seeking to lure them.

We recognize the fact that cameras in their boxes in camp cannot very well take pictures, so every reasonable effort is made to place them in service in the field as rapidly as possible, with due regard to the availability of likely sites, for little is gained in merely setting a camera for the sake of having it set. Too often we are reluctant to

move one already out. Once a camera is on duty, it always seems that surely the next night some desirable subject will fire the flash.

The upper reaches of Carboneras Cañon persuaded us to further reconnaissance. Thirty minutes from camp, we found ourselves on another saddle looking out over big country stretching away to the horizon—deep cañons, flats and distant mountains. Evidently lions made a crossing here for we found six fresh lion scratches, and close beside one of them we buried the tread of No. 3 set. A game trail led away to the south along the crest of the divide, tempting us to place No. 4 perhaps too close.

Now we turned our faces west, looking off over the landscape to Madera Mountain and beyond it to Loomis Peak, rising to an altitude of ninety-three hundred feet, and urged our horses down the slope, retracing our course to strike the main cañon again and working on westward to the saddle that marked the fork of the trail where it led on the one hand up Madera and on the other down through a broken welter of cañons to the desert south of the Carmens. A lion and her cub had left their tracks in the mud, where they had crossed the trail.

At seventy-two hundred feet we had apparently reached the head of Carboneras Cañon, another logical spot for lion travel. No. 5 set was made here and No. 6 down the cañon near the fresh tracks. Always the oil of catnip constituted the lure and fresh lion scratches gave us hope. Catnip has been used in trapping mountain lions and bobcats by government hunters of the Biological Survey, but as far as we know, it was not until this expedition into the Carmen Mountains that any photographic evidence was secured of the apparent attractiveness of this lure to our big cats in the wild.

By 3:30 we were back in camp, ready for food again, making the most of the remaining hours of daylight to work on the apparatus in preparation for more sets.

The thermometer stood at forty-nine degrees just before we turned in. At six o'clock on the morning of September 17th, it showed little change. Our camp site was so deep in the cañon and so well sheltered by the closely confining hills and mesas that the sun did not reach us until nearly nine o'clock in the morning.

Impatience to make the rounds of our cameras hurried us through breakfast. Hazlett and Sturgis rode south to check on Nos. 3, 4, 5 and 6, while Young, Wood and I turned back to the north to see what might have visited the first two sets. We left the trail at the Oso Cañon camera and climbed into the hills to look over the terrain above the approach to our first set. Pinon nuts were plentiful but the crop was not good. There were few kernels. As we crossed an oak flat, we saw one of the small Mexican white-tailed deer watching us. Now and then the sun broke through and it was pleasant to lie in the thick grass at



A bob-cat at catnip bait.

the bottom of the cañon for a brief rest while our horses, relieved of their accouterments, made the most of their opportunity and ate their fill of succulent gamagrass. Fresh bobcat and bear tracks appeared on the main trail. But the six cameras showed no sign of activity. None had been visited.

We had little time, however, to indulge in vain regrets, for the balance of our burro train appeared in mid-afternoon and again activities centered about domestic arrangements. The day had been fresh and fair, but by six o'clock in the evening there was once more an ominous gathering of heavy clouds.

I should have realized the folly of trying to sleep in the open. A splash of rain in my face at three o'clock the next morning convinced me of my error with more certainty than any amount of argument or conjecture.

And now began a series of wet days and discouraging experiences. All day of the 18th the air was misty and the clouds hung low, waiting only until evening to pour down their contents upon us in a continuing deluge.

But happily, our two sets on the nearby saddle had both been visited on the night of the 17th, and each returned us a bobcat picture. At No. 3 a cat had headed into the camera, with its nose buried in the delicious catnip. At No. 4 either the same animal or another of its

kind quartered away from the lens as it approached our attractive offering. We rushed at once to the portable darkroom, one of the numerous results of Sturgis' inventive genius, and occupied ourselves throughout the afternoon and evening developing, fixing, washing, drying and printing these, the first returns of the trip.

Throughout the 19th, with only an occasional respite, we were subjected to heavy rain. The effect of this was well illustrated by the picture brought in by Young and Hazlett after their tour of inspection covering the four cameras to the south. They had found the flash exploded at No. 5 on the second saddle, but we were never able to be sure what had set it off. The lens had become so clouded with moisture that the negative was too dim and fogged to tell us anything except that the camera had tried to do its work.

While the so-called south line was being visited, Sturgis, Wood and I inspected the first two sets, finding both still untouched and then devoted several wet, uncomfortable hours to placing No. 7 set at a fresh lion scratch near the main trail and No. 8 with a trip wire across a trail leading east toward Laguna—a small pond frequented by deer. Fortune favored us in the suspension of rain long enough to permit the tread to be arranged in good order at No. 7. Hardly was this accomplished, however, before a heavy downpour drove us to what scant shelter we could find under the oak trees, where we waited in wet discomfort for sufficient let-up to permit the loading of the camera and other finishing touches. This set was baited some days later with catnip.

By dusk we were thoroughly soaked and glad of a chance to warm up by a roaring camp fire, although as a matter of fact the temperature was not so very low, the reading being fifty-nine degrees at five P. M. That evening we found our circle enlarged by the addition of another native, who had come up from his home on the desert to join forces with us. Mariano was thus added to our staff at the suggestion of Wood.

The next day, taking advantage of fresh, comfortable temperatures and a suspension of the rain, we rode out with our last two cameras and broadened the sphere of our operations. Our trail took us up the steep wooded slope of Madera Mountain, through fine park-like expanses of ponderosa, over the crest at about eighty-three hundred feet. The descent was picturesque as we dropped down, skirting the head of Oso Cañon, and looking across to the higher peaks. At a level of seventy-nine hundred feet or so we placed No. 9 at the intersection of three trails on a divide, and followed around the base of a steep, rocky escarpment, leading up to the top of Loomis Peak, and here found favorable sign among the scrubby live oaks, where the trail edged along the southern margin of the Carmens. It seemed like excellent lion country, steep, broken and rocky, and as we sought a likely



Another Mexican bob-cat sniffs catnip.

spot, we looked down two thousand feet to a broad desert valley, and across that arid stretch to the distant Chisos Mountains, beyond the Rio Grande in Texas, forty or fifty miles away. A cottontail sat still by a rock, peeking at us out of the corner of his eye and finally bounding off as we came up—an inauspicious circumstance, suggesting the likelihood of interference with our set by the feet of this troublesome interloper. Theoretically, we should be able to arrange the requisite pressure of the tread for immunity from effective action under the weight of a rabbit. Practically, it is sometimes difficult to guard against diminishing tension resulting from wet weather and the additional weight attendant upon the soaking of the earth covering the tread.

When the tread was finally placed, No. 10 set was made with little delay.

With this last set in order, we now had all of our camera traps in action and turned towards camp with consciences relieved that no idle camera rested inactive in its carrying case.

A doe and fawn ran away under the trees as we turned into the home canyon. As usual, great expectations were generated by the mere establishment of new sets, tempering in a measure our disappointment in finding that none of the charges had flared the night before.

Continued in next issue.



A flowering *Echinocereus roetteri*.

Cacti as a Hobby

FRANK K. BALTHIS

HAPPY is the man who has a hobby, and doubly happy is he who makes cacti his hobby. The members of the Chicago Cactus Society, at least, pronounce their hobby one of the most intriguing and exciting hobbies that anyone can enjoy. 'Tis said, and with reason, that when one becomes "inoculated with the virus of cactusitis" he is lost, or woefully immeshed, in the web of enthusiastic interest for his spiny friends.

From time immemorial man has found pleasure in growing things in or about his home; starting in a primitive way, he eventually looked about him, dissatisfied with ordinary things, and sought the rare, unusual, grotesque, or the beautiful; but the man who was the happiest was he who only reached the desert and beheld what he considered as the acme of perfection. And why not? There is no group of plants more attractive, not on account of their foliage, perhaps, but because of their beauty of rib, spine, form, and flowers which rival the orchid in delicate hues and the dahlia and chrysanthemum in size and gorgeousness.

Through some quirk of nature, cacti are found growing naturally only in the Western Hemisphere, although some kinds, notably opun-

tias or prickly pears, are naturalized in many parts of the world. Their range extends into Canada on the north and into South America or the south, but the greatest number are in Mexico, or "Cactus Land." Their history is practically unknown.

The chief appeal of these plants is their extraordinary form, some are tree-like, such as the state flower of Arizona, the giant cactus or saguaro; the large barrel-like forms, weighing more than a thousand pounds, are a familiar sight to travelers in the Southwest. Some are flat, jointed, huge slabs, apparently leafless; others are small, almost insignificant, and hug the ground; still others are vine-like, serpentine in their ramblings; certain kinds are difficult to distinguish, taking on the coloration of their surroundings. But the glory of the cacti is in the beauty of their flowers—imagine a flower, tubular in shape, a foot long and as wide, with a dreamy, delicate coloring of exquisite pink or white, and deep down in the flaring mouth myriads of stamens hold court. But their period of life is limited, alas, to a single day for these open at night, enjoy a few hours of early morning and then pass away. Many open only during the day and it is said that when in bloom on the desert no adequate description can depict the scene. Few can compare with the Christmas cactus, native to Brazil, and it is included in every collection. The bishop's cap, living rock, the sacred mushroom,



Buds of the Giant Cactus, *Carnegiea gigantea*.

old man cactus, beaver's tail, grizzly bear, blind pear, prickly pear, the lowly pincushion, jumping cholla, and a host of others furnish sufficient variety for the most fastidious.

Aside from the lovely bloom, the spine characters have a special appeal for they vary in size, shape, length, number and strength. They are the armour designed to protect the watery interior from the ravages of browsing animals. The color of the spines add to their attractiveness when their flowers are absent—imagine a huge ball clothed in bright red, or yellow spiny projections, or the great clusters clothed in brown or silver, or tall stems heavy laden with long, white bristles, suggesting the bearded face of an octogenarian, or a plant buried beneath short, fuzzy, soft hairs. The range of interest is never ceasing and almost bewildering.

To be practical, cacti are among the very finest plants that can be grown in the home and especially for those whose lives are spent as "cliff dwellers" in apartment houses. Their ease of culture, when once understood, recommends them to all, but a few precautions are essential for their welfare. The soil should consist of half sand and half new garden loam, to which a little lime is added. Perfect drainage is necessary, and may be obtained by placing an inch of broken pot sherds, or similar material, over the hole in the bottom of the pots—cacti abhor wet roots. If one is not sure as to the proper time for watering, withhold it and wait until the soil is dry or nearly so. Water may be increased while the plants are in an active, growing condition. The flat-crowned kinds should not be watered over their crowns or top or it may cause decay. Sprinkling while the sun is shining should not be done or blisters may form, which may be sufficient for disease to enter and the plants may be seriously affected. Potting or repotting should be done in spring when growth starts. Examine all plants each spring to ascertain their needs, but do not overpot or an excessive amount of soil may be too retentive of moisture. Use water sparingly during winter for the plants are at rest or in a semi-dormant condition, but no plant should be permitted to become so dry that it shrivels or is weakened. A sunny place is the very best place for them for they revel in abundant light and sunshine.





Forster's Terns at Grass Lake

JAMES VON DER HEYDT

With Photographs by Robert Allen

The nesting of Forster's tern in the Chicago Area was last reported in 1876 by E. W. Nelson* who found them on June 14 and 15 of that year in the south end of Grass Lake (Lake County, Illinois). During the summers of 1936 and 1937 I saw many of these birds at the same lake. Although unable to find any of their nests, I observed adults feeding an immature bird in the late summer of 1937. This young bird, still attended by its parents, furnished strong evidence of local nesting and I resolved to search this area very diligently the following year.

On June 4, 1938, just at sunset, I discovered a colony of Forster's terns nesting in a small reed island in the center of Grass Lake. The first nest found contained two young birds and one egg which proved to be infertile. Situated on the very edge of the island, the nest was the usual well-constructed platform of reeds and cat-tails. The adult terns grew frantic at my approach and soon there were several dozen of them swooping at me, screaming wildly at the top of their lungs. The young birds crawled from the nest itself to the edge of the platform where they were extremely difficult to see.

**Birds of Northeastern Illinois*, Bull. Essex Inst., vol. 8, 1876, pp. 90-155.



Returning to the same reed island the next day, my companion and I discovered nine additional nests, two of which contained one young each, four contained three eggs each, and three, although empty, seemed to have been recently occupied. We observed twelve or thirteen pairs of adult birds. Because of lack of time we did not explore the entire island but, since we observed adult terns disappearing into the center of the island with morsels of food and rising a little later with empty beaks, we felt sure that there were other nests.

The nests varied in location and construction. Some were reed platforms built at the water level, others were mere depressions in the tops of muskrat houses, and others were hollowed out of clumps of dead reeds and cat-tails. All were difficult to see and their presence would





not be suspected by a casual passer-by if it were not for the screaming and dipping of the terns as one approached the colony.

On our second visit to the colony we were prepared to make some photographs of the birds on their nests. By draping an old pup-tent over a large tripod a suitable blind was made in the row-boat and we began operations near a nest containing a single young bird. Disturbed by our coming, the nestling crawled several feet away from its home. As soon as we were hidden by the blind, the female returned, immediately coaxed her young one back to the nest, and settled over it. At first she was very suspicious of the blind and would fly off noisily at the slightest movement or sound. She gradually became accustomed to it, however, and in a little while nothing about it bothered her. We found it possible to talk and even shout without disturbing her.

The young birds seemed distressed by the hot sun and would continually seek shade. They would sit for a little, beaks open, panting and crying for the parents to shelter them. If the parent did not come they would crawl from the nest to some nearby shady place and there await the adult bird's return.

When we returned to the colony three weeks after our first visit all the nests that we could reach were empty. We observed quite a number of young birds on the wing and found one that was not yet ready to fly.



A Hummingbird Episode

EARL G. WRIGHT

IT WAS the last week of June and the desert sun was beating down without mercy as I made my way up the steep trail from the bed of the Hassayampa River to the rim of the Box Canyon near the camp-site of the Chicago Academy of Sciences Arizona Expedition of 1937. The river at this point has cut a gorge about a hundred feet deep through the soft lava rock and the sides are very steep. About sixty feet above the canyon floor where the trail leveled off for a few feet, I was forced to brush heavily against a small palo verde tree to keep on the narrow ledge. With whirring wings a broad-tailed hummingbird (*Selasphorus platycercus*) left her nest, a tiny feather-lined cup woven of slender plant fibers and spider web, and adorned with lichens. Standing on tiptoe and pulling the branches down, I was able to see the two eggs, white and tiny but surprisingly large for such a small bird.

As I looked into the nest, the bird returned and buzzed so close to my head that the breeze from her wings was distinctly felt. I stood as quietly as possible on such precarious footing and she settled on her eggs a few inches from my face. At short intervals she lifted herself on buzzing wings to pick small insects from nearby twigs, then calmly settled back, paying me only casual attention.

Naturally the idea of photographing such an obliging subject came immediately to mind and I climbed on over the rim of the canyon to

get the necessary equipment from camp. During the half-mile walk I remembered that hummers are sometimes attracted to artificial flowers. Taking a small vial and some orange-colored cloth used for marking trap lines from the kit of the mammalogist, I fashioned a flower by wrapping the cloth around the vial and turning the fringe into a corolla. Next came the problem of artificial nectar. I drained off the juice of some preserved peaches, the only sweets in camp, and added sugared water. Turning my attention to photographic equipment, I found that the legs of our longest tripod would not extend far enough to reach the nest. The trees about camp were of the usual desert varieties, mesquite and other low, scraggly vegetation quite inadequate for my need, but in an arroyo back of the tents were some yuccas with long, straight seed-stalks several feet higher than the surrounding chaparral. It was a simple matter to secure three of these woody stems about four feet long and lash them to the legs of the tripod so that it would support the camera at the desired height. With this improvised equipment I returned to the nest.

Although the palo verde tree had no leaves, the twigs were quite dense and it was necessary to cut away some of them in order to make a place for the camera about eighteen inches from the nest. The bare



twigs and thorns cast shadow streaks across the nest and some of these had to be removed. Mrs. Hummingbird seemed interested in what I was doing but not particularly frightened. She left the nest from time to time during this disturbance but returned promptly. When the camera was at last in place between the branches and focused on the nest, I had barely enough room to hold the vial of peach juice with one hand and work the shutter with the other. When the "flower" was held about six inches away, the hummer left the nest and hovered a moment above the tempting offering and then cautiously tasted its contents.

The peach juice was to her liking, apparently, and after the first sip she inserted her long beak to its full length and partook long and heartily, her throat feathers moving up and down as she swallowed. When the vial was held close enough she drank while sitting on the eggs. Occasionally she flew down to the river, hovered close to the surface to sip some water, and immediately returned. When I placed my finger over the nest she actually perched upon it and thrust her long bill around it as if to turn her eggs!



After making about twenty exposures I dismantled the equipment and left it on the ledge while I worked my way down to the river to refresh myself in the tepid water. When I returned for the camera and tripod I found that cutting away the branches had left the nest too much exposed to the sun. The hummer sat with beak open and wings drooping in evident discomfort. Picking up the twigs that had been cut and adding a few more from other parts of the tree, I laced together a bundle of small branches and fastened them above the nest. This little canopy made a more efficient protection against the desert sun than she had before and, in a few moments, she settled back in apparent comfort. As a parting gift to this friendly midget I tied the improvised flower to a shrub at the edge of the canyon, about ten feet from the nest and slightly below, so that she could enjoy more of the sweet liquid whenever she wished.

When going down to the river some hours later I heard a commotion in the vicinity of the nest. Mrs. Hummer was valiantly defending the artificial flower from several other hummingbirds. Since the male hummingbird as a rule leaves his mate to build the nest and rear the young, I realized that she would have to defend her territory alone. I was unable to continue this delightful friendship with Mrs. Hummer for next day we moved our base camp twenty miles away.

MUSEUM ACTIVITIES



Autumn Series of Public Lectures

The Academy announces a series of free public lectures in the Auditorium, Sunday afternoons at three o'clock. The doors will be open at 2:45, and will be closed at 3:00 or before if the hall is filled. Reserved seats will be held for members until three o'clock.

November 13. Are Fishes Able to Distinguish Among Colors?

DR. F. A. BROWN, JR.

While connected with the Illinois Natural History Survey, Dr. Brown performed some interesting experiments upon the large-mouthed black bass, the results of which gave quite definite answers to a number of questions about the vision of fishes. Fishermen who use highly colored lures are especially interested in whether or not fishes discriminate between colors and if color is really a factor in their behavior toward their natural food. This lecture will discuss these problems in the light of experimental evidence. Dr. Brown is assistant professor of zoology at Northwestern University.

November 20. Geological Explorations in the South Seas.

DR. JOHN T. STARK.

Dr. Stark, associate professor of geology at Northwestern University, spent six months in 1936 studying lava flows on Moorea, Tahiti, and outlying islands of French Oceania in the South Pacific. His lecture gives an account of this work with especial reference to the geology and structure of the small island of Borabora, an eroded volcanic crater in the Leeward group of the Society Archipelago.

November 27. Artistry in Exhibits of Natural History.

EARL G. WRIGHT.

Few museum visitors who examine a beautiful habitat group of birds or mammals mounted in a replica of their natural environment can fully appreciate the amount of research, artistic skill, and mechanical dexterity which were combined in its production. Mr. Wright, curator of exhibits of the Academy, in this lecture takes the visitor behind-the-scenes in a museum, explains the reproduction of leaves and flowers in wax or celluloid; the use of natural vegetation, earth, and sand; the making of artificial snow and stone; photographic backgrounds; and the role of taxidermist, artist, and sculptor in museum exhibition.

December 4. The Significance of Human Race Differences.

DR. MELVILLE J. HERSKOVITS.

Dr. Herskovits, professor of anthropology at Northwestern University, has for many years been interested in the African negro and has worked extensively in Dahomey. In this lecture he will consider some of the various classifications of human races and discuss what has recently been termed "racial thinking," indicating the way in which explanations of many things ranging from literature to ability to operate machines have been made on the basis of race differences.

December 11. Medical Service.

DR. NATHAN S. DAVIS, III.

The problems connected with rendering the proper medical service to all income groups in a metropolitan area will be presented and analyzed, with a discussion of the methods employed by the physician in making a diagnosis and prescribing treatment. Dr. Davis, assistant professor of medicine at Northwestern University Medical School, is president-elect of the Chicago Medical Society and president of the Academy.

December 18. Home Life of Wild Birds. MARGARET MORSE NICE.

Ornithologists during recent years have given much attention to the detailed study of the behavior of birds during the different phases of their yearly life cycle. Mrs. Nice is one of the foremost workers in this field of study and has won distinction both in America and abroad. She is president of the Wilson Ornithological Club, a fellow of the American Ornithologists Union, corresponding fellow of the Royal Hungarian Ornithological Society, and an honorary member of the Deutsche Ornithologische Gesellschaft. Among her published writings are *The Birds of Oklahoma, A Population Study of the Song Sparrow*, and many contributions to technical journals. In this lecture she will describe the phenomenon of "territory" in bird life, the part played by each parent in nest building, care of eggs and young, and many other activities in the home life of familiar birds.

Recent Scientific Publications by the Academy

Additional numbers of Volume 5 of the *Bulletin of the Chicago Academy of Sciences* recently issued are the following:

Mammals of the Great Smoky Mountains, by Edwin V. Komarek and Roy Komarek, No. 6, pp. 137-162, 1 map, 3 plates, Aug. 15, 1938; a report on studies resulting from field investigations made in Tennessee and North Carolina by representatives of the Academy in cooperation with the U. S. National Park Service during the years of 1931 to 1934.

The Subspecies of the Copperhead, Agkistrodon mokasen Beauvois, by Howard K. Gloyd and Roger Conant, No. 7, pp. 163-166, 1 plate, Sept. 20, 1938; some preliminary taxonomic results of a monographic study of the American forms of the genus *Agkistrodon* on which the authors have been engaged for several years.

Number 8 of this volume of the *Bulletin*, now in press, is *A Synopsis of North American Birds of Prey and Their Related Forms in Other Countries*, by Major L. R. Wolfe.

Scientific Meetings

The Wilson Ornithological Club and the Inland Bird Banding Association will meet in Ann Arbor, Michigan, on November 25 and 26. Since many ornithologists of Chicago and vicinity will wish to attend the meetings of these societies, it is considered inexpedient to have a joint meeting of local ornithological organizations at the Academy on the Saturday following Thanksgiving this year. It is hoped that a committee representing all societies concerned may be formed to assure the continuance in the future of this annual event which has been so successful during the past several years.

The annual meetings of the American Society of Ichthyologists and Herpetologists and the American Society of Mammalogists were held at Berkeley, California, from July 19 to July 23 this year. The Academy was represented at these meetings by Walter L. Necker and, through an exhibit of photographs of mammals, by the Vice-President, Tappan Gregory. Both

societies had extremely successful meetings, due in large part to the splendid work of the local committee representing the University of California, Leland Stanford Junior University, and the California Academy of Sciences.

Mr. Necker was commissioned to prepare a twenty-five year herpetological index to *Copeia* and Dr. Gloyd, Director of the Academy, was elected

Vice-President of the A. S. I. H. This organization will hold its 1939 meeting in Chicago next May.

Mr. Necker spent some time in California as the guest of Major Chapman Grant of San Diego and visited several museums and libraries on the West Coast in pursuit of his research toward the *Bibliography of Herpetology* on which he has been engaged for several years.



The new group of Whooping Cranes.

The Chicago Environs Series Completed

The final section of the Chicago Environs Series of exhibits on the second floor of the Museum was completed during the past summer and opened to the public on September 11.

These groups, representing the animal and plant life of the vicinity of Chicago, from the Indiana Dunes to the woodland on the west shore of Lake Michigan, form a continuous series around the entire hall. Their preparation has been in progress for several years under the direction of Earl G. Wright, curator of exhibits, with the assistance of Thurston I. Wright and other members of the staff.

The section just completed consists of five groups of larger game birds: Canada geese, snow geese, and blue geese on the shores of Lake Calumet; whooping and sandhill cranes on the hillocks surrounding Lake Calumet; and wild turkeys in their last Chicagoland outpost, the back-dune country, where they were last seen in the late eighties.

New Members

The following were recently elected to membership in the Academy:

Contributing

Lloyd Neely

Sydney Stein, Jr.

Sustaining

Dr. M. Herbert Barker

Associate

L. A. Bittorf
Melvin Burmeister
Dr. Charles E. Burt
Bertha Cramer
J. E. Coe
C. O. Decker
Alan C. Dixon
Nellie R. Durkin
Professor C. W. G. Eifrig
C. H. Ekdahl
Edward R. Ford
Dr. Stella M. Gardner
George Seth Guion
B. Brower Hall
C. E. Holcombe

Dr. Alfred Lewy
Grace B. Lincoln
Ernest C. Marquart
Mrs. Langdon Pearse
Frank A. Pitelka
Doris A. Plapp
Flora G. Richardson
Julia C. Sager
H. R. Smith
Patricia Ann Smith
Herbert L. Stoddard
Tillie Sturm
J. Roy West
Elizabeth White
Major L. R. Wolfe

Distinguished visitors at the Museum during the summer were Miss Grace R. Meeker of Ottawa, Kansas, author of *Getting Acquainted with the Mosses* in the first issue of the *NATURALIST*; Dr. Gordon L. Walls of the Ophthalmic Research Laboratory, Wayne University College of Medicine, Detroit, Michigan; R. Marlin Perkins, Director of the Buffalo Zoological Park, Buffalo, New York; and E. V. Komarek of the Cooperative Quail Study Association, Thomsville, Georgia, and Roy Komarek of the North Carolina Department of Conservation, Raleigh, North Carolina, both former members of the Academy staff.

The Academy was "on the air" recently in connection with the "Meet Chicago" program of Columbia Broadcasting System's Chicago Station WBBM. Ken Ellington, "the roving reporter," visited the museum with his technical assistants and recording apparatus and interviewed Dr. Gloyd and Mr. Wright, describing the exhibits and activities of the Academy as one of Chicago's points of interest. The electrical transcription was broadcast at 11:30 A. M., September 17.

Pepoon's *Flora of the Chicago Region*, a comprehensive account of the plant ecology of the region bordering the southern end of Lake Michigan, with an annotated list of nearly two thousand plants, illustrations, keys, and a winter key to the trees by V. O. Graham, is now available in limited quantity at **\$2.50 per copy**, bound in cloth, postpaid. It was published by the Academy and originally sold for \$3.50. Send remittance with order to the Chicago Academy of Sciences, Lincoln Park at Clark and Ogden, Chicago.



QUARTZ FAMILY MINERALS

By H. C. Dake, Frank L. Fleener, and Ben Hur Wilson

McGraw-Hill Book Company, Inc., New York, London, 1938, 304 pages, colored frontispiece, 52 illustrations, line drawings, and halftones, \$2.50.

Those who read sometimes are in the mood to give impatient assent to the ancient and sage observation, "Of the making of many books there is no end, and much study is a weariness of the flesh." However, three men, writers and teachers, have joined forces to offer a book which promises immunity from flesh weariness. Their theme is embodied in the attractive group of minerals possessing common chemical and physical bonds and classified scientifically as the quartz family minerals.

Out of a sustained experience in writing and lecturing for a public with an interest in minerals and in science, the authors have capably anticipated the viewpoint of their clientele. The mode of treatment adopted by the authors has brought the allurements of mineralogy, geology, archeology, and history to the horizon of the busy and casual reader. The work does not appear in the guise of a textbook nor does it deter the reader by the prospect of "much study." On the contrary, in a series of logically arranged chapters, it furnishes enough material on the genesis of quartz to prepare the reader and collector for full appreciation of the multitudinous minerals. The book functions further by its plentiful citations of mineral localities famous as collecting grounds; by its full presentation of the many and curious modes of oc-

currence in the quartz family; and by its encyclopedic treatment of the varieties of quartz and the distinctions to be recognized among them.

In its sub-title, "A Handbook for the Mineral Collector," the purpose of the book is adequately expressed. But the capacity of quartz not only to attract but actually to serve mankind is so great that this volume becomes far more than a mere field and laboratory guide. The history of quartz as a factor in the lives of men, all the way from the age of the arrow point and skinning knife to modern uses in scientific research and industry, demonstrates both the utility and beauty of quartz. From the tokens and gems of the ancients to the prized collections of individuals and museums one may trace the pathway of quartz in the cultural development of man.

In its more technical passages the book incorporates a few formulae and diagrams to present the composition of the outer crust of the earth and to illustrate crystal habits in quartz. Remaining illustrations are halftones of good texture and definition. The color tones of agate in its natural occurrence and its susceptibility to artificial staining are shown in a colored frontispiece. The book presents a pleasing appearance, and, for a prompt publication on the part of the publishers, typographical errors are very few. The glaze of the paper used does not reflect artificial light strongly, a preventive against flesh weariness for which the publishers are to be thanked. A chapter on "The Art of Cutting Gem Quartz" and a selected list of references for further reading in this field are added at the end of the book.—John R. Ball.

NOTES FROM THE FIELD

Behavior of a Nesting Wood Pewee

Our conception of animal intelligence forbids us to say that the wood pewee *expected*. But when, after more than two weeks, her eggs failed to hatch she appeared to be restless.

For a week or more before I found the nest, August fourth, I saw her in the oaks about the cottage. Perhaps her time of patient sitting had begun several days earlier, but it is certain that from the fourth until about the sixteenth her constancy was beyond criticism. Afterward she would leave the nest for longer periods, until, just as I had persuaded myself that she had abandoned it altogether, she would be seen again in the accustomed place.

Always, in rainy weather, she kept the eggs covered. During one wild day when torrents of rain fell for hours on end and great boughs crashed in the

gale, she held fast, unprotected in the horizontal fork of a dead branch, lay flat on the shallow nest—seeming integral with it, shed the wind and the rain with concentrated inertia.

I think she had no consort for I saw but one pewee about the place. I foresaw her frustration and wondered how long she would persist. On the twenty-sixth I observed her for the last time. I waited three days and then, using a ladder and a fishpole, dislodged the nest. Two small eggs, which proved to be without embryos and addled, fell to the ground—twenty-two days and more of lost labor! In about the same period a successful hatch would have seen the young on the wing.

Our conception of animal intelligence forbids us to say that the wood pewee *reflected*. But she must have reached some sort of awareness that the season was far advanced for the kind of thing she had kept at overlong.

—Edward R. Ford.



TAPPAN GREGORY, author of *Lion in the Carmens*, is by profession a lawyer, First Vice-President of the Chicago Bar Association and a member of the Committee on Character and Fitness appointed by the Supreme Court of Illinois for the First Appellate Court District. He has also attained distinction in his avocation, the study of mammals, and his remarkable flashlight photographs have set an unsurpassed standard of excellence in technique. Among his published writings in natural history are *Deer at Night in the North Woods*, *Mammals of the Chicago Area*, and *The Black Wolf of the Tensas*. He is Vice-President and Honorary Curator of Mammals of the Academy.

An Autumn Mushroom

Autumn with its changing colors attracts the artistic to our forests. Some see the beauty and brilliance of red maple or of black gum foliage; others are attracted by the occasional red, gold, or white of a mushroom. From September fifteenth to November first, usually associated with oak in the Chicago Region, but just as commonly with beech trees east of this area, may be found in great numbers the honey-colored mushrooms, *Armillaria mellea*. During autumn, men — sometimes women too — with

sacks congregate in the forest and on hands and knees part the long grass to gather the small mushrooms growing from roots and buried decaying wood. Although collecting has been the rule for many years, the supply seems ever abundant and the oaks must suffer the consequence. A wounded oak on which the honey mushroom grows is as seriously diseased as a human being afflicted with tuberculosis. Fortunately for the trees the bark, when unbroken, is an impenetrable armor serving to protect the tree from the entrance of this dread disease.—V. O. Graham.

Catharine A. Mitchell

“With malice toward none and charity for all” was genuinely a guiding motif in the life of Catharine A. Mitchell who on August 23 surrendered her earthly life to the life beyond. Known for her loyalty and her kindness she was held in esteem and her friendship cherished by all who knew her. The supreme pleasure in her life was not the hilarity of seeing a passing show, but being of service to someone in want or distress, and through this she gained a place of profound respect among her friends and acquaintances.

Miss Mitchell was an active member of many clubs of nature-lovers, held office in some, and with intense devotion did her share to help preserve for posterity our wild life and our trees and woods. She was never found wanting in her zeal to give the denizens of the fields and forests, and the forests themselves, a chance to live and flourish unmolested. Her deep-seated religion was conservation in the fullest sense of the word, and her love for the out-of-doors was the crown-glory of her life.

She will be missed especially by the Illinois Audubon Society of which she was Secretary for many years. The Friends of Our Native Landscape will have a vacant chair in the Board of Directors; the Conservation Council will deplore her passing; the Prairie Club and the Wild Flower Preservation Society have lost one who labored wholeheartedly in their support. Conservationists and naturalists of the Chicago Area as a whole will for years to come remember the work of Catharine A. Mitchell.

—E. T. Baroody.



Maintained in Thatcher Woods by
The Forest Preserve District of Cook County
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Signs of fall are quite evident about Trailside Museum; the animals are preparing to hibernate; migratory birds pause in their flight; fall colors are resplendent in the woods; and groups of school children troop through the museum. Considerable material for museum exhibits has been amassed throughout the summer and the staff is looking forward to the opportunities afforded by winter days to complete the arrangement of these acquisitions so that they may be enjoyed by the public. The popularity of the museum continues, and numerous groups, both school children and adults, have requested conducted walks through the museum and the adjacent Forest Preserve.

Mr. Pearsall, the Curator, has been preparing a photographic library which will consist of contact prints and enlargements mounted in large albums and maintained for reference. The projected albums will include pictures of wild flowers, insects, reptiles, amphibians, birds, and mammals, and already good photographs of over four hundred species of flowering plants have been obtained. This work has brought to notice the interesting observation that there are apparently many more species of plants near the city than in the outlying areas. Among the rarer species photographed were the Hooker's orchid, yellowish gentian (*Gentiana flavida*), fringed gentian, ladies' tresses, grass of Parnassus, golden aster (*Chrysopsis mariana*), and the leather flower. In early September in one small marsh south of Riverside

were found forty-seven species of wild flowers. The wet weather and lack of frost probably account for the blooming of flowers ordinarily appearing in March and April—the blue violets, skunk cabbage, and marsh marigold—which were found in full bloom in a bog at Irving Park Boulevard near the Des Plaines River on October fifth.

The live animals about Trailside Museum are taking on their heavier winter coats and storing fat under their skins as protection from the cold days ahead. Last year Woody, the pet woodchuck, hibernated from November to April, and he is now busily preparing for his coming slumber by building a nest of old paper in the woodpile. Nuts, acorns, and seeds are being stored by the rusty fox squirrels, gray squirrels, and chipmunks; in the case of the chipmunks the food is being placed in underground storehouses adjacent to the underground burrows in which hibernation occurs. Fall migration restlessness is also evident among the snakes and turtles.

As numbers of birds meet misfortune in their southward flight, many are brought to the museum, and the bird hospital at this period of the year is particularly active. The birds which recover sufficiently are of course set free to continue their migration.

Bertrand Wright, museum assistant during the summer months, has returned to the University of Illinois to continue his graduate work. John L. Castleman of Maywood has been employed as a full-time assistant.

THE NATURALISTS CALENDAR OF EVENTS

This department aims to bring together a chronological list of events and activities of general interest to naturalists of the Chicago Region. Organizations not represented in this issue are invited to send us their announcements for future numbers. For more detailed information write or telephone the office or representative of the organization in question.

CHICAGO ACADEMY OF SCIENCES, Lincoln Park at Clark and Ogden Ave., Diversey 5871.

CHICAGO AQUARIUM SOCIETY, Mr. Herman Green, Secretary, Plaza 2088. Meetings at the Harvey Restaurant, Strauss Building, third Wednesday of each month.

CHICAGO CACTUS SOCIETY, Mr. Frank K. Balthis, President, Garfield Park Conservatory, Van Buren 8100. Meetings last Sunday each month, Garfield Park Conservatory, 3:00 P. M.

CHICAGO ENTOMOLOGICAL SOCIETY, Mr. Alex K. Wyatt, Secretary, 5909 N. Virginia Avenue, Ravenswood 3115.

CHICAGO ORNITHOLOGICAL SOCIETY, Mr. Rudyerd Boulton, President, Field Museum, Wabash 9410. Meetings third Tuesday each month, Crerar Library, 8:00 P. M.

FRIENDS OF OUR NATIVE LANDSCAPE, Miss R. B. Eskil, 6016 Ingleside Avenue, Hyde Park 8313.

GEOGRAPHIC SOCIETY OF CHICAGO, 7 S. Dearborn, Randolph 5293. Resumes meetings in October.

ILLINOIS AUDUBON SOCIETY, Chicago Academy of Sciences, Diversey 5871.

MEN'S GARDEN CLUB OF THE CHICAGO REGION, Mr. O. V. Morgan, 404 Washington Street, Elmhurst, Secretary. Meetings second Thursday each month.

MID-WEST HORTICULTURAL SOCIETY, Administration Building, Garfield Park, Van Buren 8100. Meetings last Friday each month.

PRAIRIE CLUB, 38 S. Dearborn Street, Dearborn 3737.

STATE MICROSCOPICAL SOCIETY OF ILLINOIS, W. L. Necker, Chicago Academy of Sciences, Diversey 5871.

Oct. 21 State Microscopical Society of Illinois, *The Eyes of Science*, a motion picture featuring the microscope. To accompany this, E. A. Lorenz of Bausch & Lomb will give an interesting talk on how to get the most out of your microscope, together with a demonstration of many interesting microscopical objects. Academy Auditorium, 8:00 P. M.

Oct. 22 Prairie Club walk, Hollywood, about 5 miles.

Oct. 22 Geographic Society of Chicago. Gold Medal presentation ceremonies at the Annual Post-Vacation Luncheon when Professor Nevin M. Fenneman, the eminent geographer and physiographer will receive the Geographic Society's Gold Medal.

Oct. 23 Prairie Club walk, Tremont-Miller, 20 miles.

Oct. 28 Mid-West Horticultural Society, Administration Building, Garfield Park, 8:00 P. M.

- Oct. 27 Amateur Herpetologists, *Keeping Live Reptiles*, E. G. J. Falck, Academy Auditorium, 7:30 P. M.
- Oct. 29 Field Museum, public lecture, *Birds and Animals of the Far North*, Commander Donald McMillan, Field Museum, 2:30 P. M.
- Oct. 29 Prairie Club Halloween walk, Willow Springs-Maple Lake, about 6 miles.
- Oct. 30 Chicago Cactus Society, Garfield Park Conservatory, 3:00 P. M.
- Nov. 5 Field Museum, public lecture, *Where the Rainbow Ends*, Howard MacDonald, Field Museum, 2:30 P. M.
- Nov. 5 Prairie Club walk, Des Plaines-Park Ridge, 5 to 6 miles.
- Nov. 8 Geographic Society of Chicago, Illustrated lecture, *Tibet, Penthouse of the Gods*, Theos Bernard, Orchestra Hall. (For members only.)
- Nov. 10- Dec. 4 Chrysanthemum shows, Lincoln and Garfield Park Conservatories, open 8 A. M. to 10 P. M. each day.
- Nov. 12 Field Museum, public lecture, *Primitive Tribes of the Guianan Jungle*, Colonel Charles Wellington Furlong, Field Museum, 2:30 P. M.
- Nov. 13 Chicago Academy of Sciences, public lecture, *Are Fishes Able to Distinguish Among Colors?*, Dr. F. A. Brown, Jr., Academy Auditorium, 3:00 P. M.
- Nov. 15 Chicago Ornithological Society, Academy Auditorium, 8:00 P. M.
- Nov. 16 Chicago Aquarium Society, dinner at 6:45 P. M., meeting at 7:45 P. M., Harvey Restaurant, 308 South Michigan Avenue. Open to all interested.
- Nov. 17 Amateur Herpetologists, *How to Identify Reptiles and Amphibians*, Academy Auditorium, 7:30 P. M.
- Nov. 18 State Microscopical Society of Illinois, *Ballistics in Connection with Crime Detection*, Allan P. Wescott, Academy Auditorium, 8:00 P. M.
- Nov. 19 Field Museum, public lecture, *America and Isles of the Pacific*, Fred Payne Clatworthy, Field Museum, 2:30 P. M.
- Nov. 20 Chicago Academy of Sciences, public lecture, *Geological Exploration in the Southwest*, Dr. J. T. Stark, Academy Auditorium, 3:00 P. M.
- Nov. 20 Chicago Entomological Society, Children's Library of The Chicago Academy of Sciences, 2:00 P. M.
- Nov. 22 Geographic Society of Chicago, illustrated lecture, *Finland*, Julien Bryan, Orchestra Hall. (Members only.)
- Nov. 25 Mid-West Horticultural Society, Administration Building, Garfield Park, 8:00 P. M.
- Nov. 26 Field Museum, public lecture, *The Human Side of Nature*, Sam Campbell, Field Museum, 2:30 P. M.
- Nov. 27 Chicago Academy of Sciences, public lecture, *Artistry in Exhibits of Natural History*, Earl G. Wright, Academy Auditorium, 3:00 P. M.
- Nov. 27 Chicago Cactus Society, Garfield Park Conservatory, 3:00 P. M.
- Dec. 4 Chicago Academy of Sciences, public lecture, *The Significance of Human Race Differences*, Dr. Melville J. Herskovits, Academy Auditorium, 3:00 P. M.
- Dec. 11 Chicago Academy of Sciences, public lecture, *Medical Service*, Dr. Nathan S. Davis, III, Academy Auditorium, 3:00 P. M.

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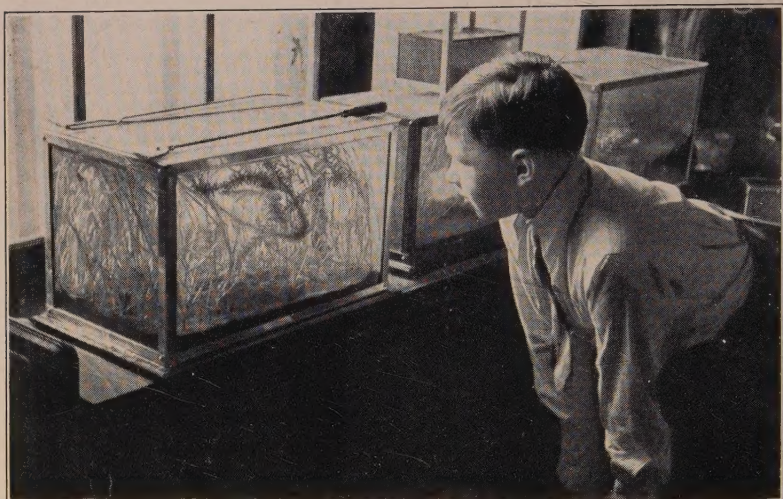
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